

# Bullet Camera

**DWC-LPR550**



## ABOUT MANUAL

Before installing and using the camera, please read this manual carefully.  
Be sure to keep it handy for future reference.

## PRECAUTIONS

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- Do not open or modify.
- Do not open the case except during maintenance and installation, for it may be dangerous and can cause damages.
- Do not put objects into the unit.
- Keep metal objects and flammable substances from entering the camera. It can cause fire, short-circuits, or other damages.
- Be careful when handling the unit.
- To prevent damages, do not drop the camera or subject it to shock or vibration.
- Do not install near electric or magnetic fields.
- Protect from humidity and dust.
- Protect from high temperature.
- Be careful when installing near the ceiling of a kitchen or a boiler room, as the temperature may rise to high levels.
- Cleaning:  
To remove dirt from the case, moisten a soft cloth with a soft detergent solution and wipe.
- Mounting Surface:  
The material of the mounting surface must be strong enough to support the camera.

## FCC COMPLIANCE

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference, when the equipment is operated in a residential environment. This equipment generates, uses, and radiates radio frequency energy; and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications.

**WARNING:** Changes or modifications are not expressly approved by the manufacturer.

## TABLE OF CONTENTS

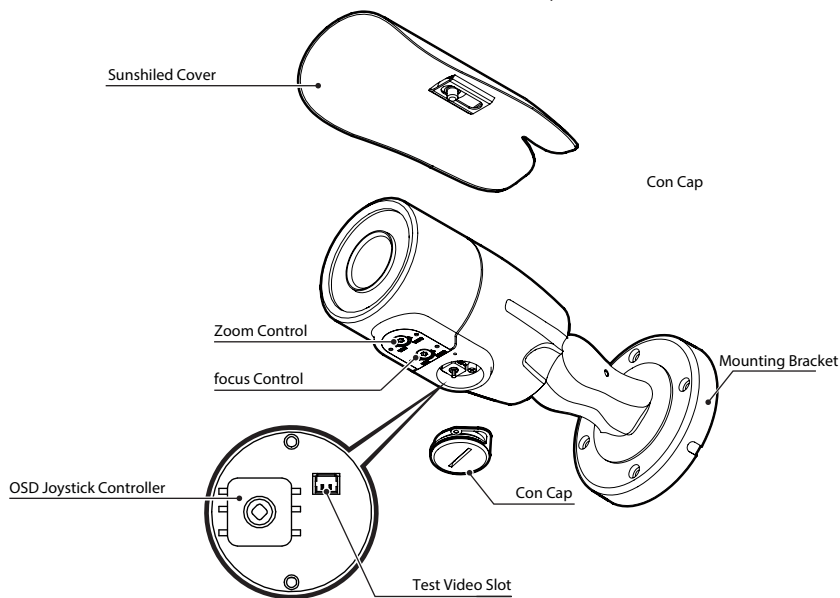
<b>Introduction</b>	Features	4
	Parts and Descriptions	5
	Dimensions	6-7
<b>Installation</b>	Inside the Box	8
	Mount Installation Instructions	9
	LPR Installation Instructions	10
	Connecting to Monitors	11
	Control Board	12
	Adjusting the Camera Angle	13
<b>Module OSD Menu</b>		14-23
<b>Troubleshooting</b>		24
<b>Warranty Information</b>		25-26
<b>Specifications</b>		27

## FEATURES\*

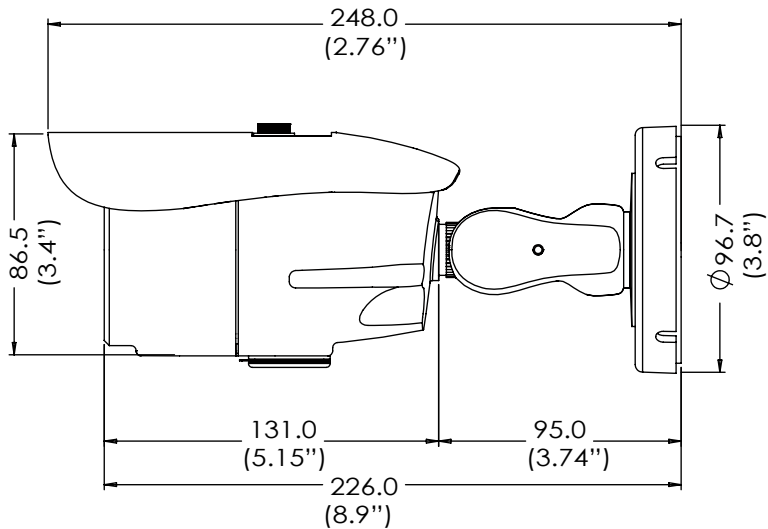
- STAR-LIGHT LPR™ License Plate Recognition Technology captures reflective license plates up to 50mph with a 13'~30' Capture Range
- Reliable Performance under Any Lighting Conditions
- STAR-LIGHT™ Super Low Light Technology
- External OSD and Lens Adjustment
- True Day/Night with IR Cut Filter
- 1/3" 960H CCD, 700TVL [B/W]
- 5-50mm Varifocal Lens
- Smart IR™ 150ft Range
- No Fog or Condensation Under any Condition
- IP66 Certified
- Secondary BNC Output
- UTC (Up-to-Coax) Compliant



## PARTS & DESCRIPTION\*



## DIMENSIONS IN MILLIMETERS (IN)\*



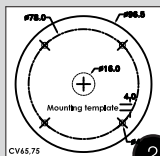
## INSIDE THE BOX\*

### Included with Bullet Camera:

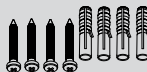
- ① User Manual
- ② Mounting Template
- ③ 4 Machine Screws and 4 Dry Wall Anchors
- ④ Secondary Video-BNC Cable
- ⑤ L-Key
- ⑥ Test Monitor Cable



①



②



③



④



⑤

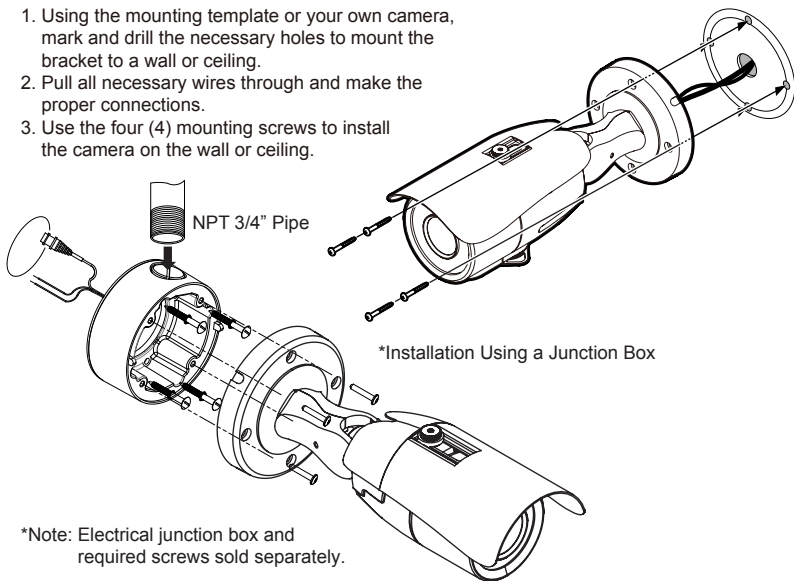


⑥



## INSTALLATION INSTRUCTIONS\*

1. Using the mounting template or your own camera, mark and drill the necessary holes to mount the bracket to a wall or ceiling.
2. Pull all necessary wires through and make the proper connections.
3. Use the four (4) mounting screws to install the camera on the wall or ceiling.

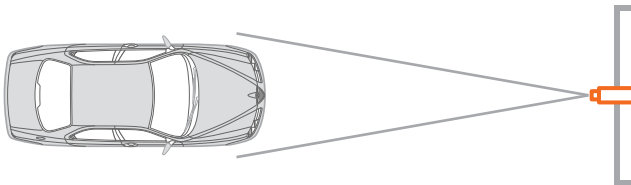


## INSTALLATION INSTRUCTIONS\*

An LPR camera is designed to read a license plate only. When a license plate passes by the camera, the reflective film on the plate will be reflected back to the camera which gives you the good clear shot of the plate. You will **ONLY** capture an image of the plate. US license plates need to be at least 130 pixels wide. This translates roughly into an image no wider than 5-6 feet assuming 4CIF standard definition video.

1. The horizontal angle between the camera and plate should be within 20° degrees. This means that if your camera is 10 feet away from the plate, the plate cannot be more than 3 feet to the right or left of the camera.
2. The vertical angle between the camera and plate is within 30° degrees. This means that if your camera is 10 feet away from the plate and the plate is 3 feet off the ground, the camera cannot be mounted more than 8 feet high.
3. Attempting to position the security camera at odd angles or exceeding the distance capabilities will result in a poor shot of the plate
4. The DVR's recording fps should be at the highest to assure best capture quality.

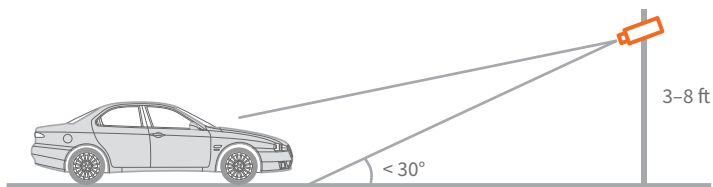
**THE CAPTURED IMAGE SHOULD BE FILLED WITH THE FULL WIDTH OF THE VEHICLES**



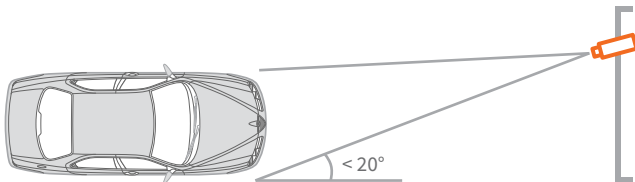
# INSTALLATION INSTRUCTIONS\*

LPR Camera Installation

THE CAMERA SHOULD BE MOUNTED AT AN ANGLE NO GREATER THAN 30 DEGREES

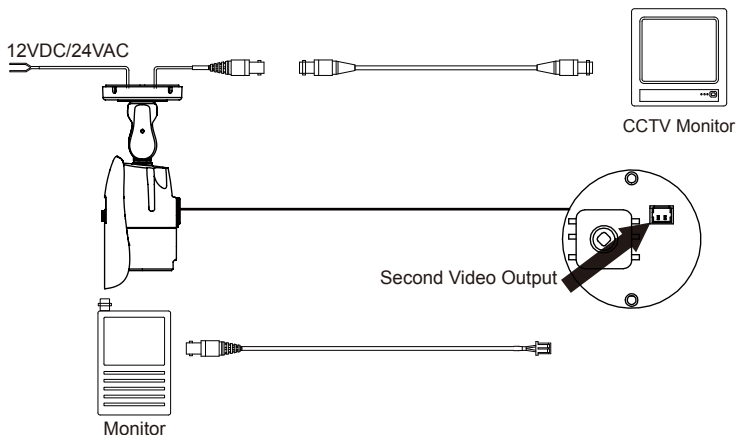


CAMERA ANGLE NO GREATER THAN 20 DEGREES FOR SIDE MOUNT INSTALLATIONS



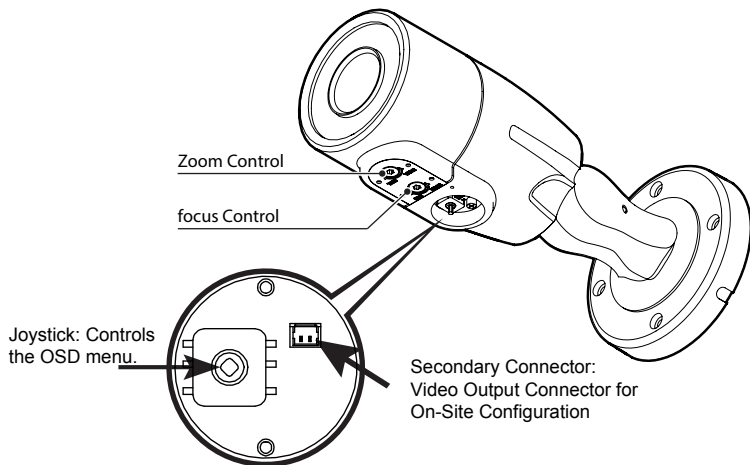
## CONNECTING TO MONITORS\*

Use the diagram below to connect to a Monitor or CRT Monitor properly.



- Power Connection - 12VDC/24VAC Dual Voltage (Auto Polarity Detection and Protection)
- All cameras are equipped with a second video output for on-site configuration.

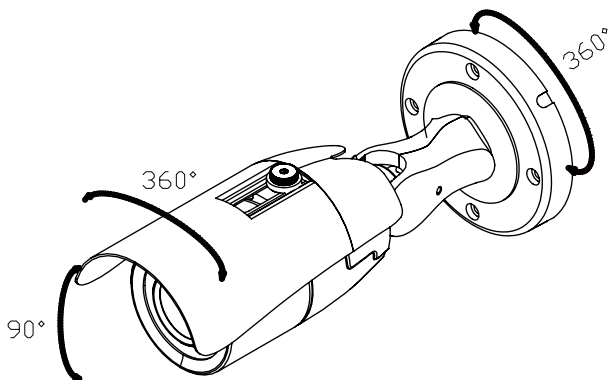
## CONTROL BOARD\*



- 1 Remove the camera's lens cover by rotating it counter-clockwise.
- 2 Use the Joystick to control the camera's OSD options.



## ADJUSTING THE CAMERA ANGLE\*



### CAUTION :

- ❶ Do not rotate more than 360°.
- ❷ Do not unnecessarily twist too many times.

## MODULE OSD MENU\*

EXPOSURE	COLOR	DAY & NIGHT	FUNCTION
<ul style="list-style-type: none"> <li>LENS</li> <li>MANUAL / DC</li> <li>BACKLIGHT</li> <li>OFF / BLC / HME</li> <li>DRC / DEFOG</li> <li>OFF / DRC / DEFOG</li> <li>AGC</li> <li>0~20</li> <li>STARLIGHT</li> <li>OFF</li> <li>3D DNR</li> <li>OFF</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>	<ul style="list-style-type: none"> <li>WB BAL.</li> <li>NOT USED</li> <li>COLOR GAIN</li> <li>NOT USED</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>	<ul style="list-style-type: none"> <li>D&amp;N MODE</li> <li>NOT USED</li> <li>CONTROL</li> <li>NOT USED</li> <li>DELAY</li> <li>NOT USED</li> <li>B/W BURST</li> <li>OFF / ON</li> <li>SMART IR</li> <li>ANTI-SAT / SAT. AREA</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>	<ul style="list-style-type: none"> <li>MIRROR</li> <li>OFF / ON</li> <li>SHARPNESS</li> <li>0 ~ 20</li> <li>GAMMA</li> <li>0.35 ~ 0.70</li> <li>POS/NEGA</li> <li>POS/NEGA</li> <li>SLC</li> <li>0~20</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>
MOTION	PRIVACY	SETUP	EXIT
<ul style="list-style-type: none"> <li>MOTION</li> <li>OFF / ON</li> <li>SENSITIV.</li> <li>0 ~ 30</li> <li>MOTION SET</li> <li>AREA NO / AREA USE / TOP /</li> <li>BOTTOM / LEFT / RIGHT</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>	<ul style="list-style-type: none"> <li>COLOR</li> <li>NOT USED</li> <li>PRIVACY SET</li> <li>AREA SET / DISPLAY / TOP /</li> <li>BOTTOM / LEFT / RIGHT /</li> <li>RET/IN/</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>	<ul style="list-style-type: none"> <li>CAMERA TITLE</li> <li>OFF / ON</li> <li>SYNC</li> <li>INT. / LL</li> <li>COMMUNICA.</li> <li>CAM ID / ID DISP. / BAUDRATE /</li> <li>PROTOCOL / UTC</li> <li>LANGUAGE</li> <li>ENGLISH</li> <li>FONT COLOR</li> <li>NOT USED</li> <li>SPECIAL</li> <li>Q.L.P.F. / DPC</li> <li>EXIT JUMP</li> <li>SAVE &amp; EXIT / EXIT</li> </ul>	<ul style="list-style-type: none"> <li>SAVE</li> <li>RESTORE</li> <li>EXIT</li> </ul>

### NOTE

This is a License Plate Recognition Camera. As such, it has been programmed specifically to register license plates only. For optimal results, this camera is set to B/W mode only. There is no Color mode on this camera. As a result, some of the menu options, such as Color and Day/Night menu options, are disabled for this camera.



## EXPOSURE



### LENS

Manual

Manual mode supports the fixed board lens or the manual iris lens.

DC

DC mode supports the auto-iris varifocal lens.

**Brightness:** Adjust the camera's brightness from 0~20. The higher the number, the brighter the image will appear.

**Shutter:** Sets the lens' shutter speed. This value is set by default to 1/1000 for optimal license plate capture.

**FLC:** Enable or disable to adjust the camera's view and prevent the image from flickering.

**FOCUS SET:** Adjust the focus by finding the highest number on the FOCUS SET.

### Lens Submenu



### BACKLIGHT

BLC

#### BACK LIGHT COMPENSATION

This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.

HME

#### HIGHLIGHT MASKING EXPOSURE

This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.





## EXPOSURE

### DRC

#### DYNAMIC RANGE COMPRESSOR

This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.

- DEFOG: This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.

### AGC

0-20

#### AUTO GAIN CONTROL

AGC enhances the picture brightness in low light conditions.

AGC is set by default to 0. This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.

### STARLIGHT

OFF / x2 ~ x512

Automatically activates slow shutter function when the image is too dark.

High values are not recommended as they may causes the image to lag.

Star-Light is set by default to OFF. This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.

### 3D DNR

OFF/ LOW/ MID/ HIGH

**3D DIGITAL NOISE REDUCTION-** 3D-DNR reduces the noise on the screen in low light conditions and allows for clearer images, even at night.

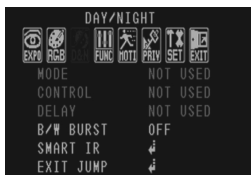
3D DNR is set by default to OFF. This feature is set by default to work with the camera as a license plate capturing camera. Do not change the values.



## COLOR

### NOT USED

This is a License Plate Recognition Camera. As such, it has been programmed specifically to register license plates only. For optimal results, this camera is set to B/W mode only. There is no Color mode on this camera. As a result, White Balance and Color Gain under the Color Menu and Day/Night Mode, Control and Delay options under the Day/Night Menu are not used for this camera.



## DAY & NIGHT

### B/W BURST

OFF / ON If ON is selected, the camera provides a color burst signal in night mode.

**SMART IR - ANTI-SAT:** Select level value from 1 ~ 20. Default is set to 15  
**- SAT. AREA :** Set SMART IR area from 0 ~ 20. Default is set to 10.





## FUNCTION

### MIRROR

OFF

MIRROR Reflects the camera horizontally.



Mirror OFF



Mirror ON

### SHARPNESS

0 ~ 30 Sets the image sharpness. The higher the number, the sharper the image.

### GAMMA

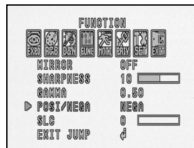
0.35 ~ 0.7 Select the desired gamma level. 0.7 is default setting.

### POSI / NEGATIVE

OFF / ON If NEGATIVE is enabled, the camera's image will appear in negative colors.

### SLC (SIDE LIGHT COMPENSATION)

0~20 Increase the brightness on sides of the image.





## MOTION

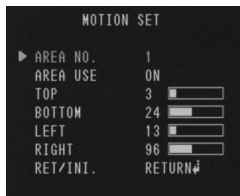
The camera can detect the movement and display an alarm on the screen when movement is detected.

### MOTION

OFF / ON Select to enable or disable the camera's motion detection. If ON is selected:

### SENSITIV.

0 ~ 30 Sensitivity level of the motion detection is adjustable. Motion Detection will be more sensitive at a higher number.



### MOTION SET

- Area Number: The camera supports up to 4 different motion detection masks. Select which ones to display.
- Area Use: Select which one of the motion areas to enable.
- TOP: The higher the number, the higher the top border of the mask will be in the camera's view.
- BOTTOM: The higher the number, the lower the bottom border of the mask will be in the camera's view.
- LEFT: The lower the number, the closer the mask will be to the camera's left border.
- RIGHT: The lower the number, the closer the mask will be to the camera's right border.
- RET/INI.: Select whether to return to the main menu, or reset the motion settings to factory default.



## PRIVACY



You can hide some parts of the screen for privacy masking.  
A total of 8 different privacy masking zones are available.

### MASK COLOR

This is a License Plate Recognition Camera. As such, it has been programmed specifically to register license plates only. For optimal results, this camera is set to B/W mode only. There is no Color mode on this camera. As a result, Mask Color under the Provacv Menu are not used for this camera.



### PRIVACY SET

- Area Number: The camera supports up to 8 different privacy masks. Select 1~8 which masks to display.
- Area Use: Select which one of the motion areas to enable.
- TOP: The higher the number, the higher the top border of the mask will be in the camera's view.
- BOTTOM: The higher the number, the lower the bottom border of the mask will be in the camera's view.
- LEFT: The lower the number, the closer the mask will be to the camera's left border.
- RIGHT: The lower the number, the closer the mask will be to the camera's right border.
- RET/INI.: Select whether to return to the main menu, or reset the motion settings to factory default.

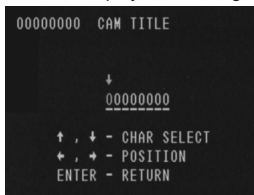




## SETUP

### TITLE

OFF / ON If ON is selected, you can display the camera title on the screen. If enabled, manually enter the camera's display name using the joystick controller.



### INTERNAL SYNC.

INT/ Select whether the camera synchronizes internally or using Line Lock.

### COMMUNICATION

The Communications settings allow you to setup the camera's ID, Baudrate, Protocol, and UTC.

- CAM ID: Provide an ID number for the camera ( 0 ~ 255 ).
- ID DISP.: Decide to show the ID on screen or not. Select ON & OFF.
- BAUDRATE: 9600bps is default. Select the baudrate from the following options: 2400/4800/9600/57600 and 115200bps.
- PROTOCOL: Set as PELCO-D/ PELCO-P.
- UTC: Automatically set UTC as 15/ 32 BIT.





## SETUP

### LANGUAGE

The camera supports the following languages: ENGLISH.

### FONT COLOR

This is a License Plate Recognition Camera. As such, it has been programmed specifically to register license plates only. For optimal results, this camera is set to B/W mode only. There is no Color mode on this camera. As a result, Font Color and OLPF Options Under the Setup Menu are not used for this camera.

### SPECIAL

DPC: Set as START and compensate the white dot by changing the THRESHOLD value.





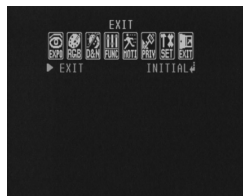
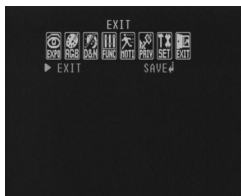
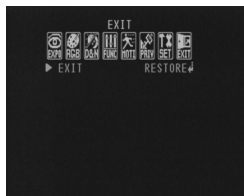
# EXIT

EXIT

**SAVE** Exit the OSD menu after saving the recent changes.

**RESTORE** Exit the OSD menu without saving recent changes.

**INITIAL** Exit the OSD menu after resetting the camera to factory default.



## **TROUBLESHOOTING**

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Before sending your camera for repair, check the following or contact our technical specialist.

### **FOR NO VIDEO**

Check the coaxial cable and make sure it is connected securely.

Check the lens' iris adjustment at the camera's OSD menu.

Check the power supply and make sure the camera has the proper voltage and current.

### **FOR OUT-OF-FOCUS VIDEO**

Check the clear dome cover and the lens for dirt or fingerprints. Use a soft cloth and gently clean. Check the lens' manual focal and zoom adjustment. The use of a field test monitor is recommended.



## WARRANTY INFORMATION\*

Digital Watchdog (referred to as “the Warrantor”) warrants the Digital Watchdog Camera against defects in materials or workmanship as follows:

**LABOR:** For the initial five (5) years and one (1) year on IR LED from the original purchase date, if the camera is determined to be defective, the Warrantor will repair or replace the unit with a new or refurbished product at its option at no charge.

**PARTS:** In addition, the Warrantor will supply replacement parts for the initial five (5) years and one (1) year on IR LED.

To obtain warranty or out of warranty service, please contact a Technical Support Representative at **1-866-446-3595** Monday through Friday from 9:00AM to 8:00PM Eastern Standard Time.

A purchase receipt or other proof of the original purchase date is required before warranty service is rendered. This warranty only covers failures due to defects in materials and workmanship which arise during normal use. This warranty does not cover damage which occurs in shipment or failures which are caused by products not supplied by the Warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, rental use of the product or service by anyone other than an authorized repair facility or damage that is attributable to acts of God.

## LIMITS & EXCLUSIONS\*

There are no express warranties except as listed. The warrantor will not be liable for incidental or consequential damages (including damage to recording media without limitation) resulting from the use of these products or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions or limitations listed above may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state-to-state.

If the problem is not handled to your satisfaction, then write to the following address:

Digital Watchdog, Inc.  
ATTN: RMA Department  
5436 W. Crenshaw Street  
Tampa, FL 33634

Service calls which do not involve defective materials or workmanship as determined by the Warrantor, in its sole discretion, are not covered. Costs of such service calls are the responsibility of the purchaser.

## SPECIFICATIONS\*

VIDEO	
Image Sensor and Total Pixels	1/3" 960 CCD Sensor, 960(H) X 478 (V), 520K
Scanning System	2 : 1 Interlace
Frequency	15.734KHz (H), 59.95Hz (V)
Synchronization	Internal or Line Lock
Horizontal Resolution	700 TV Lines [B/W]
Minimum Illumination	0 Lux (F1.2 , 30IRE) at TDN(B/W)
S/N Ratio	52dB (AGC off)
Video Output	CVBS: 1.0Vp-p / 75 $\Omega$
LENS	
Focal Length and Lens Type	5~50mm Varifocal Auto Iris Lens
IR Distance	150ft Range IR
ENVIRONMENTAL	
Operating Temperature and Humidity	-10°C ~ 50°C (14°F ~ 122°F), Less than 90% (Non-Condensing)
IP Rating	IP66 (Protects against dust and high pressure water.)
ELECTRICAL	
Power Requirement	Dual (DC12V & 24VAC)
Power Consumption	DC12V: LED OFF: , LED ON: 3.6W, 300mA
	AC24V: LED OFF: , LED ON: 3.8W, 158mA
MECHANICAL	
Housing Material and Dimensions	Aluminum, 234.5 x 82.2 mm (9.23 X 3.23 in)
Weight	1.83 lbs

\*Specification is subject to change without prior notice.



*Complete Surveillance Solutions*

5436 W Crenshaw St. Tampa, FL 33634

Tel : 866-446-3595 / 813-888-9555

Fax : 813-888-9262

[www.Digital-Watchdog.com](http://www.Digital-Watchdog.com)

[technicalsupport@dwcc.tv](mailto:technicalsupport@dwcc.tv)

Technical Support Hours : Monday-Friday

9:00am to 8:00pm EST